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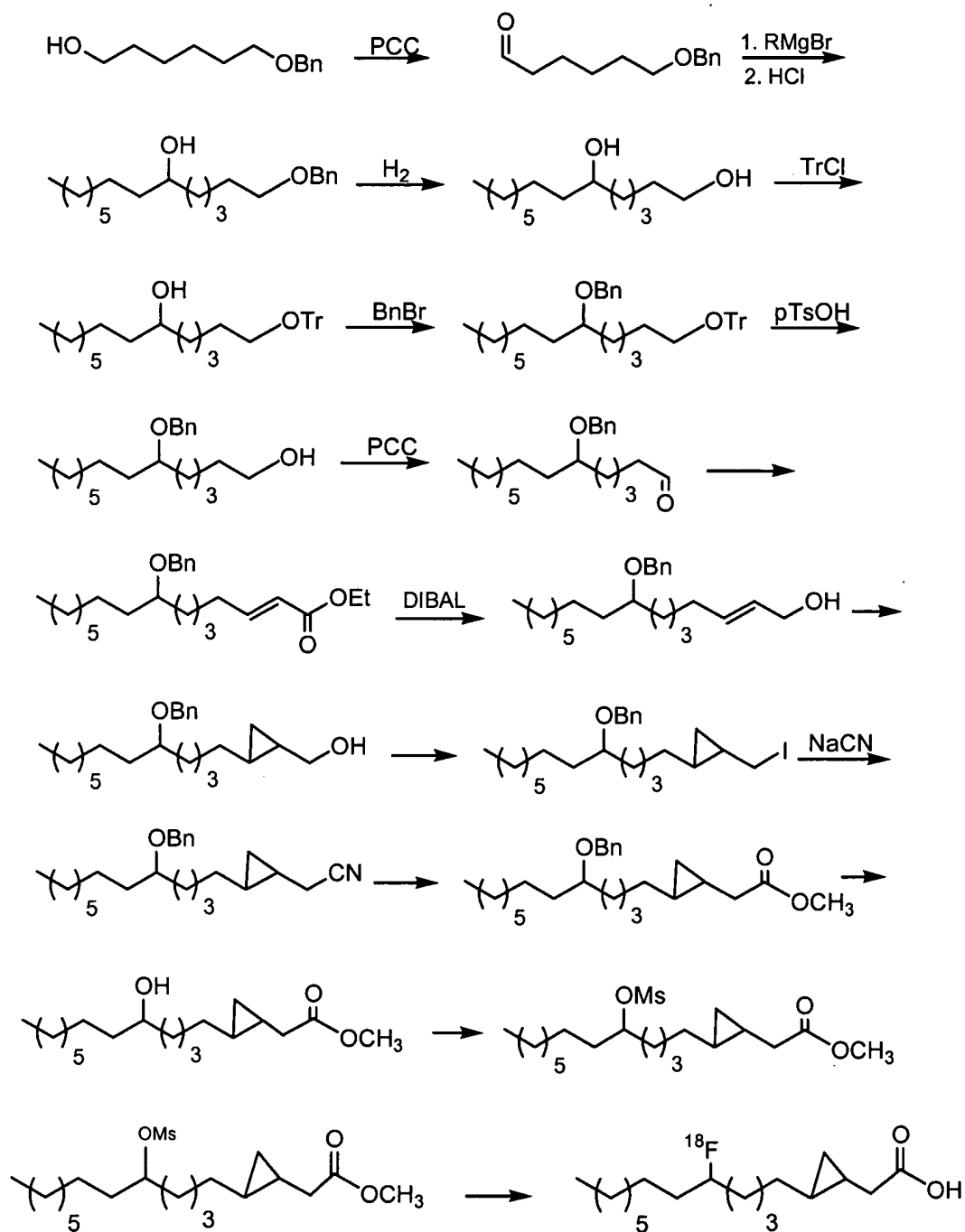
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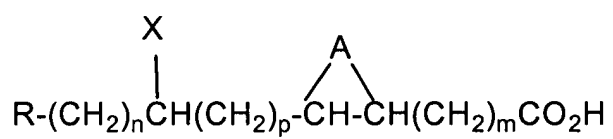
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Synthesis of [ $^{18}\text{F}$ ]-9-Fluoro-3,4-Cyclopropylheptadecanoic Acid

FIG.1

Aliphatic-halide



A = (CH<sub>2</sub>)<sub>y</sub>, O, S

y = 1, 2, 3, 4

cis and trans; R,R and S,S

m = 0, 1, 2, 3, 4, etc.

n = 14 - 8

p = 0 - 6

R = CH<sub>3</sub>

X = <sup>18</sup>F or <sup>123</sup>I

FIG.2

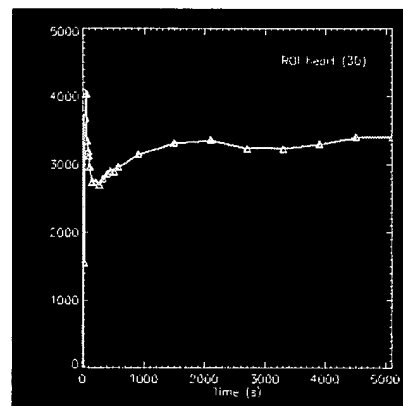


FIG. 3

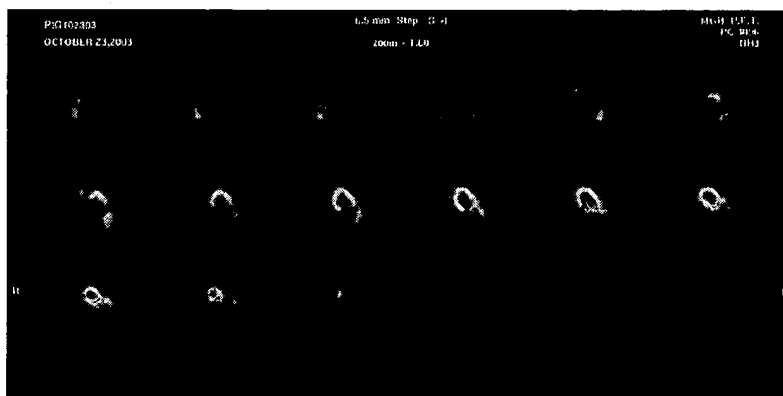


FIG. 4



FIG. 5

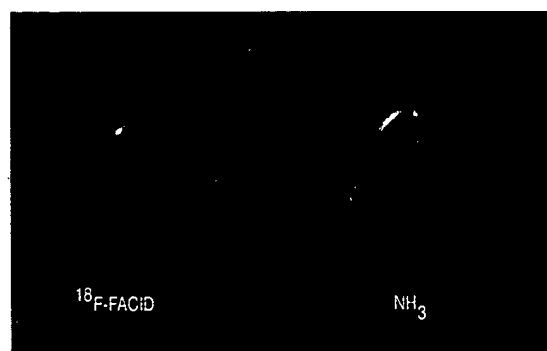


FIG. 6

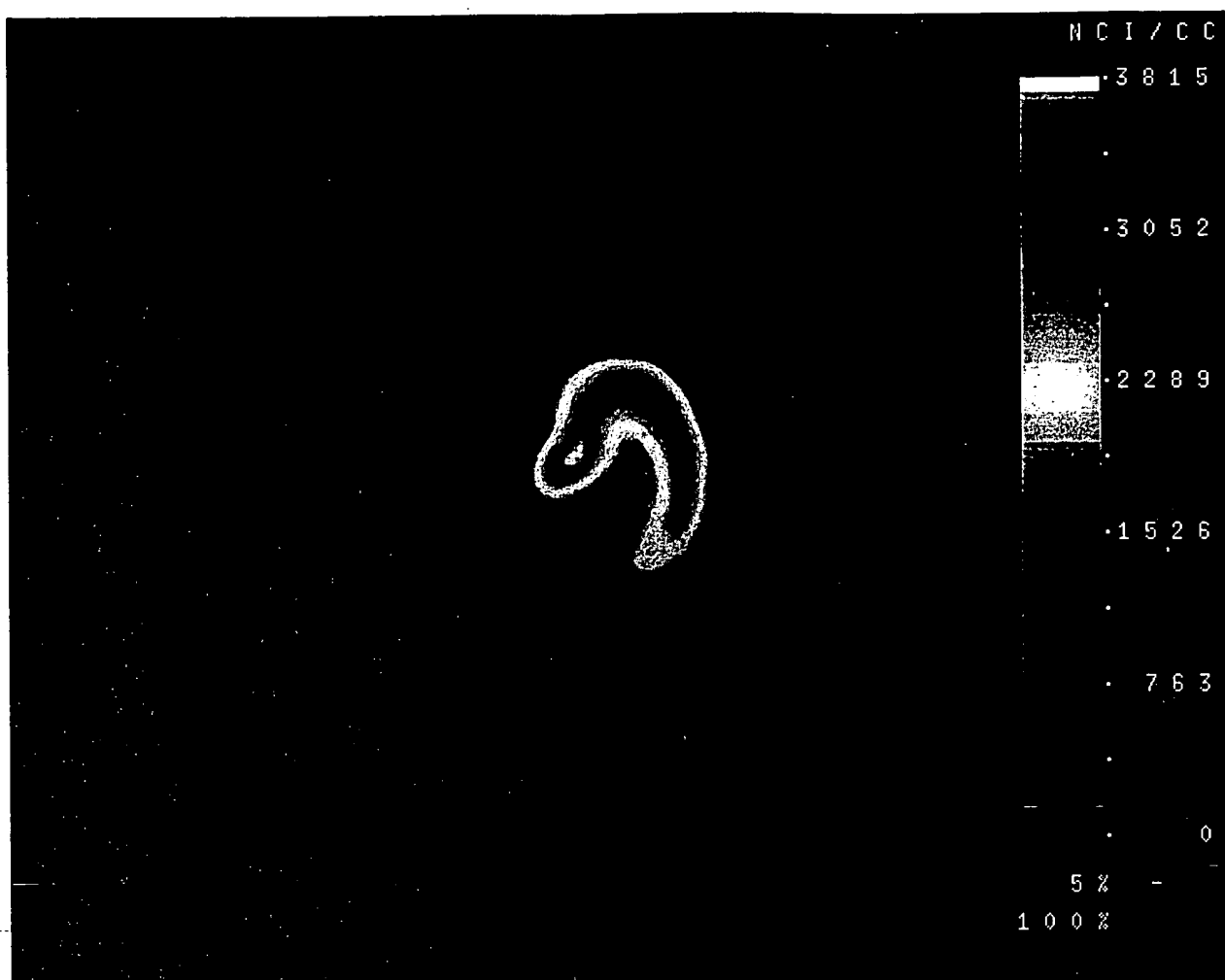


FIG.7



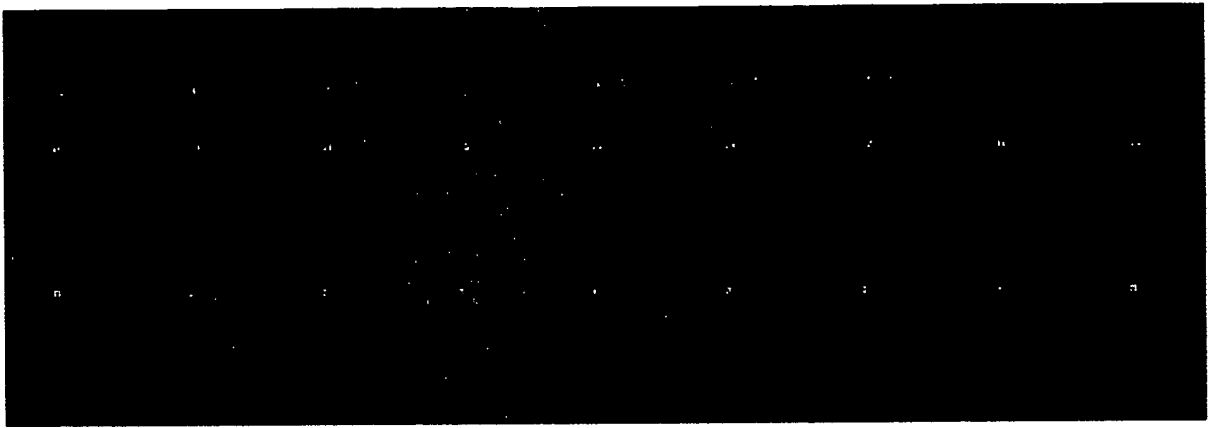
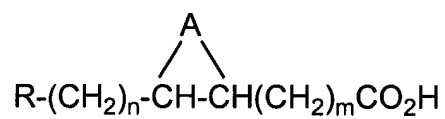


FIG. 8



A = (CH<sub>2</sub>)<sub>x</sub>, O, S

x = 1, 2, 3, 4

cis and trans; R,R and S,S

m = 0, 1, 2, 3, 4, etc.

n = 14 - 8

R = <sup>18</sup>F-phenyl or <sup>123</sup>I-phenyl

examples:

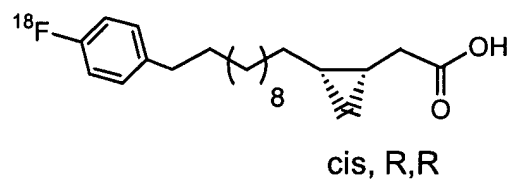
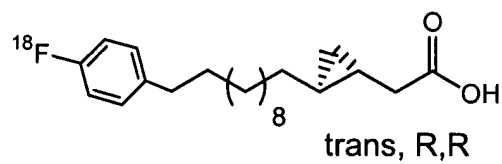
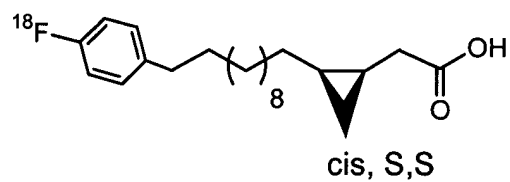
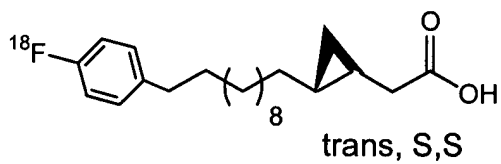
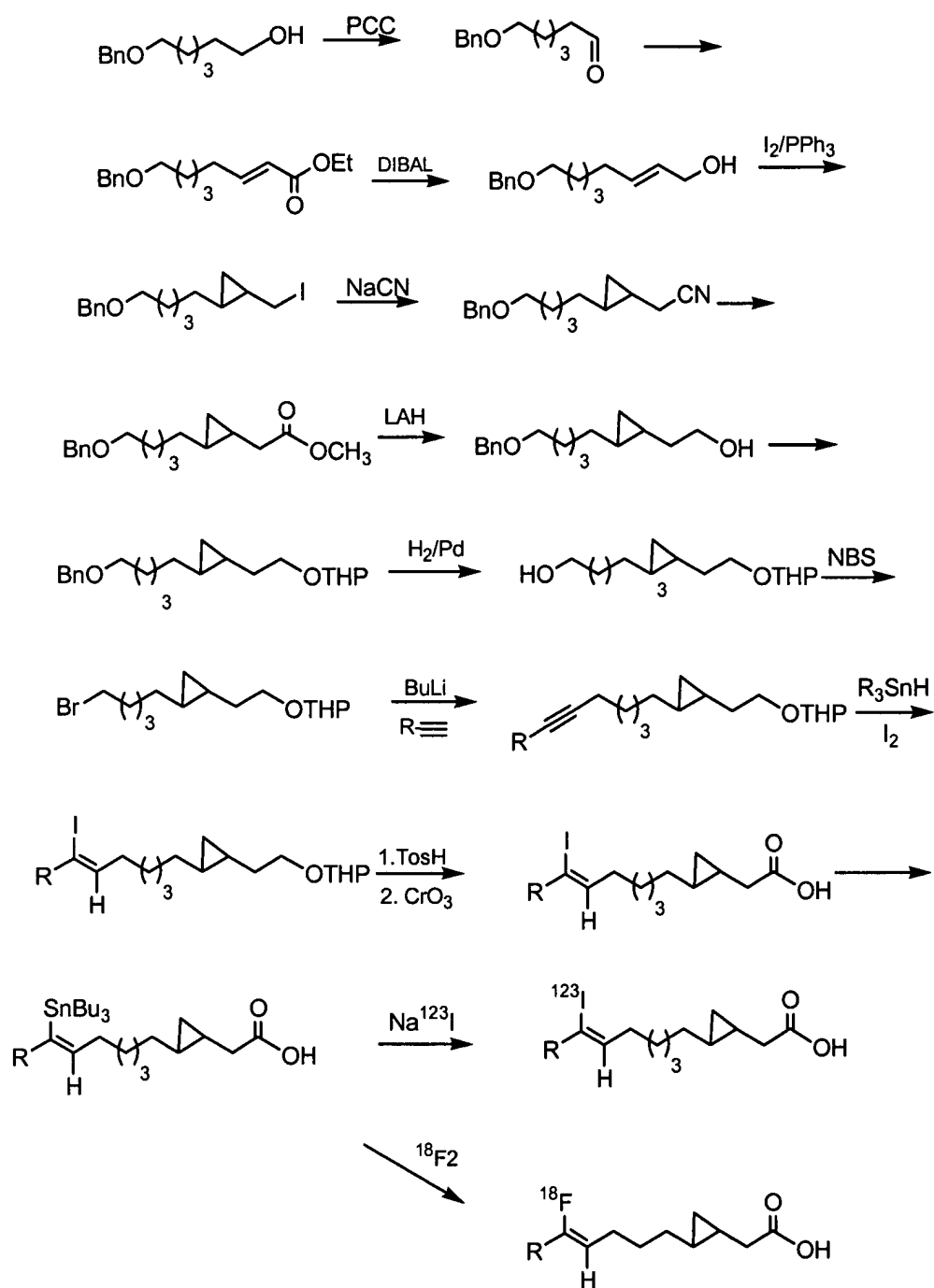


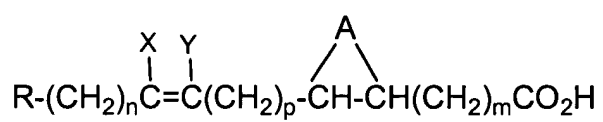
FIG.9



Synthesis of Endo- [ $^{18}\text{F}$ ]Fluoro- or [ $^{123}\text{I}$ ]Iodo-3,4-Cyclopropylheptadecanoic Acid

FIG.10

Endo-halovinyl



$X = {}^{18}F \text{ or } {}^{123}I, \quad Y = H$

$X = H, \quad Y = {}^{18}F \text{ or } {}^{123}I$

$A = (CH_2)_z, O, S$

$z = 1, 2, 3, 4$

cis and trans; R,R and S,S

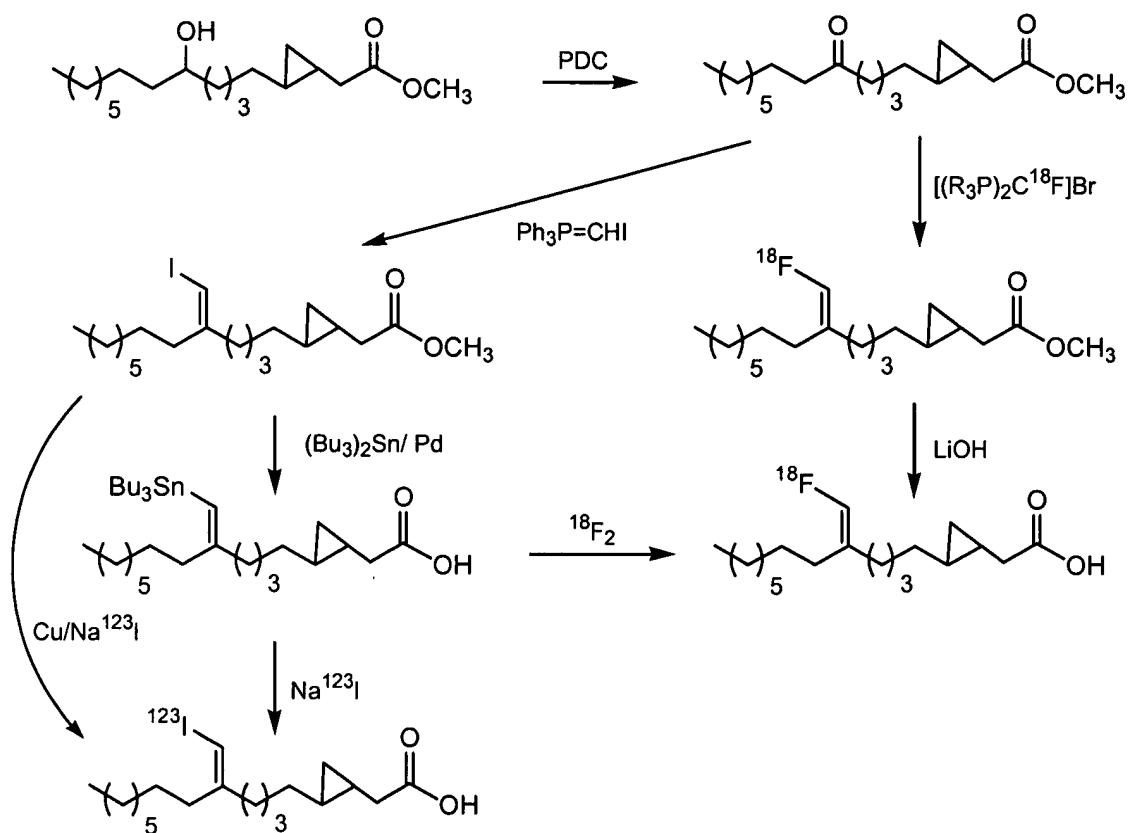
$m = 0, 1, 2, 3, 4, \text{ etc}$

$n = 14 - 8$

$p = 0 - 6$

$R = CH_3, \text{ aryl, heterocyclic}$

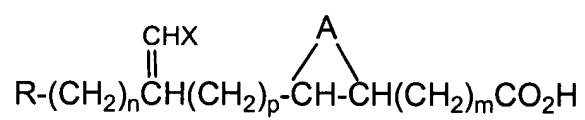
FIG.11



Synthesis of Exo- [ $^{18}\text{F}$ ]Fluoro- or [ $^{123}\text{I}$ ]iodo-3,4-Cyclopropylheptadecanoic Acid

FIG.12

Exo-halovinyl



A = (CH<sub>2</sub>)<sub>y</sub>, O, S

y = 1, 2, 3, 4

cis and trans; R,R and S,S

m = 0, 1, 2, 3, 4, etc.

n = 14 - 8

p = 0 - 6

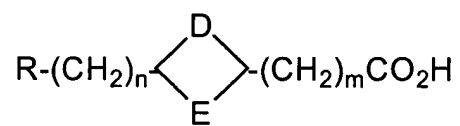
R = CH<sub>3</sub>, aryl, heterocyclic

X = <sup>18</sup>F or <sup>123</sup>I

FIG.13



Ring is 4 or 5 membered with all structural variations from FIG.2, 9, 11, and 13



D = CH<sub>2</sub> or CH<sub>2</sub>CH<sub>2</sub>

E = CH<sub>2</sub> or CH<sub>2</sub>CH<sub>2</sub>

m = 0, 1, 2, 3, 4, etc.

n = 14 - 8

R = CH<sub>3</sub>, aryl, heterocyclic

FIG.15